Rathlin Kelp

The kelps of the northern hemisphere occur at and below tide height, and are a large group of brown seaweeds that live on the seabed to depths at which sunlight penetration will allow - at around 10 to 20 metres.

On Rathlin these seaweeds grow in profusion and are often seen growing in dense aggregations or 'forests' usually composed of a single species. Five species are found in the waters around Rathlin, and they have have long strap like fronds with a short stubby stipe (stem) and are attached to the rocks by a structure called a holdfast. Each species had its own distinctive appearance and is distinguished by the type of location in which it grows' which is defined by depth and range of exposure to wave action, the strength of the tide.

Laminaria *digitata*, is the most common and is commonly known by thre islanders as sea tangles and was the main kelp gathered in the past to be exported for production of iodine and other extracts. Laminaria *hyperborean* looks like digtata, but grows in deaper water and its stipe is flatter. It is known as dogweed and tends to attract more 'biofoul' – other algae which grows on it making it look unattractive – probably contributing to its name. Saccorhiza *polyschides* is long and stringy and known as sea spaghetti. These three species are all 'ripe' – ready to release spores, between May and September. The spores appear as brown raised patches on the Laminarias and as little dots on the Saccorhiza. Alaria *esculenta* is a sub arctic species and grows particularly well around Rathlin, liking the constant cold waters and strong tides. It has the local name of 'murrier' (probably gaelic). Less common is Sugar Kelp, Saccharina *Latissimia,* which likes calmer conditions, so mostly grows around the harbour and bay area. These species release their spores between January and April.

Forests of these kelps provide a rich and diverse living environment likened to that of a coral reef. The tree-like multi layered structure of the individual seaweed provides a wide variety of animals the ideal place to live or shelter. Small animals such as crustaceans, brittlestars, molluscs and worms live within the holdfast, while the fronds provide surface area for a range of colonial animals such as sea mats (bryozoans), and epiphytic seaweeds. In between the seaweeds animals such as sponges, urchin and other seaweeds colonise the rock surface and the large plants provide shelter to small or juvenile fish from predators. This combination of suitable structures allows for a diverse range of species to manifest itself as spectacular and thriving kelp community. A second important function of kelp forests is the production of organic material. Kelps and the other seaweeds found in kelp forests grow by fixing carbon dioxide through the process of photosynthesis. The resulting vegetation eventually dies, producing flakes of rotting plant material and dissolved chemicals derived

from plant material, both of which act as food sources for bacteria and single-celled animals. These, in turn, provide food for larger animals such as fish and lobsters.